

REMARKS

Applicant amended claims 1 and 102 and added new claims 141-155 to further define Applicant's claimed invention. The amendment to claim 1 is supported at least by the language of claim 35 as originally filed, page 16, line 20 of the specification, and Fig. 5. New claims 141, 142, 145, and 146 are supported at least in Fig. 9. New claim 144 is supported at least in Fig. 5. New claim 147 is supported in the specification at least on page 5, line 1; page 7, lines 5-12; and Fig. 4. New claims 148, 149, 150, and 153-155 are supported by claims 10, 11, 13, 25, 36, and 37, respectively, as originally filed. New claims 151 and 152 are supported in the specification at least on page 6, lines 2-4. New claims 141-155 read on invention I, species 1 as defined by the Restriction Requirement of November 30, 2001. The amendment to the specification is supported at least by the language of claims 7, 36, and 37 as originally filed.

In the Office Action, the Examiner objected to the drawings for not showing the features of claims 7, 10, 11-14, 16, 17, 36, and 37. Applicant is submitting concurrently herewith a proposed drawing correction showing the features of claims 7, 36, and 37.

For claim 10, the Examiner is referred to Fig. 9, which shows a curve at leading end 102 that extends from exterior facing side wall 114 at point B past mid-longitudinal axis MLA at point C.

For claims 11-13 and 16, the Examiner is referred to Fig. 10, which shows projections or surface roughenings in the form of ratchetings 220.

For claims 14 and 16, the Examiner is referred to Fig. 5, which shows elements 110 that permit implant 100 to be porous.

The Examiner objected to the amendment to the specification inserting a new

paragraph after line 6 of page 17 under 35 U.S.C. § 132 as introducing new matter.

Applicant respectfully traverses the objection. The new paragraph is supported at least by claim 39 as originally filed directed to an implant having opposed portions in "moveable relationship to each other to allow for relative motion of the adjacent vertebral bodies after said implant is installed." Applicant respectfully brings to the Examiner attention that MPEP § 2163(I)(B) states that "[t]he claims as filed in the original specification are part of the disclosure...." (MPEP § 2163(I)(B), page 2100-157, col. 2 (August 2001); see also, MPEP § 608.01(I) "Original Claims," page 600-69, col. 2 (August 2001)). Applicant submits that the added material is not new matter and is fully supported by the original disclosure.

The Examiner rejected claims 2, 4, 8, 9, 35, and 39 under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicant respectfully traverses the Examiner's rejections. For claim 2, and referring to Fig. 9, for example only, point C at leading end 102 can be at greater distance from perpendicular bisecting plane BBP (the first distance) than point A (the third distance).

For claim 4, and referring again to Fig. 9, for example only, point C at leading end 102 can be at a approximately the same distance from perpendicular bisecting plane BBP (the first distance) as point A (the third distance). One exemplary embodiment falling within the scope of this claim would include a leading end having a generally flat portion between the interior side wall and the mid-longitudinal axis of the implant.

In response to the Examiner's request for an explanation, in claim 8 the subject matter is drawn to an implant where less than half of the leading end is linear along a

plane perpendicular to the mid-longitudinal axis. As to claim 9, the subject matter is drawn to an implant where more than half the leading end is a curve extending from the exterior side wall toward the mid-longitudinal axis. For example only, where the entire leading end is curved, under claim 9 the portion of the leading end between the exterior side wall and the mid-longitudinal axis would be more curved than the rest of the leading end, resulting in a greater portion of the leading end being between the exterior side wall and the mid-longitudinal axis by virtue of the increased distance along the greater curve. Reference to a plane "dividing said implant into an upper half and a lower half" in claims 8 and 9 is to emphasize that the leading end is curved from the exterior side toward the mid-longitudinal axis at least proximate the middle of the height of the leading end.

For claim 35, Applicant addressed this rejection and cancelled claim 35 in Applicant's reply dated September 11, 2002.

For claim 39, Applicant is submitting in the IDS concurrently filed herewith, U.S. Patent No. 5,258,031 to Salib et al. Salib et al. teach an implant applying the general concept of permitting relative motion of the adjacent vertebral bodies after installation of the implant. (See, for example, abstract, lines 3-6 and Fig. 3). It is submitted that one skilled in the art would appreciate and understand the concept of relative motion of the adjacent vertebral bodies after installation of the implant in the context of the invention as taught by Salib et al.

The Examiner rejected claims 1, 2, 4, 6, 8-13, 15-17, 23, 24, 33, 38, and 40-42 under 35 U.S.C. § 102(b) as being anticipated by French Publication No. 2,724,312 to Albert. Independent claim 1 recites an implant having at least one opening to permit

bone growth from adjacent vertebral body to adjacent vertebral body through the implant, "each of said at least one openings of said opposed portions having a mid-longitudinal axis and a maximum dimension in a plane perpendicular to the mid-longitudinal axis of each of said openings, said hollow interior having a maximum dimension between said inner surfaces of said interior and exterior facing side walls and in a plane perpendicular to the mid-longitudinal axis of said openings greater than said maximum dimension of said opening."

Albert teaches an intersomatic spacer with an open plan to allow "osseous filling" with bone mass. (See, English translation of Albert, numbered page 4, lines 8 and 9, a copy of which was provided in the Information Disclosure Statement dated September 11, 2002). In the spacer taught by Albert, the interior and the openings of the top and bottom are of the same dimension. (See, Albert, Figs. 1, 2, and 5). Albert does not teach or suggest an implant as claimed in independent claim 1.

The Examiner also rejected claims 7, 14, 18-22, 25-32, 34, 36, 37, 39, and 101 under 35 U.S.C. § 103(a) as being unpatentable over Albert in view of U.S. Patent No. 5,609,635 to Michelson. Applicant submits that the rejection over claims 7, 14, 18-22, 25-32, 34, 36, 37, 39, and 101 is rendered moot at least in view of the patentability of independent claim 1, which Applicant submits is in condition for allowance and from which the rejected dependent claims depend either directly or indirectly.

The Examiner also rejected claims 1-34, 36-42, and 101-140 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,349,921 to Kuntz in view of Michelson. Both independent claims 1 and 102 recite an implant having a third distance as measured from the junction of the leading end and the interior side wall to

the plane perpendicular to and bisecting the length along the mid-longitudinal axis of the implant that is greater than a second distance as measured from the perpendicular plane to the junction of the leading end and the exterior side wall.

In one embodiment, Michelson teaches an implant having a generally flat insertion end 120 and a curved trailing end 130. (Michelson, col. 7, lines 4-5; Fig. 2). Michelson does not teach an implant having a leading end where the third distance is greater than the second distance. Kuntz teaches a solid disc prosthesis which does not permit tissue to grow into the structure of the prosthesis. (Kuntz, col. 6, lines 42-45).

Applicant respectfully submits that the rejection is improper and must be withdrawn because Kuntz teaches away from the invention of Michelson. (See MPEP § 2145(X)(D)(2) "References Cannot Be Combined Where Reference Teaches Away from Their Combination," col. 1, page 2100-157 (February 2003)). Michelson teaches an implant having openings 115 that "provide for bone growth to occur from the vertebrae through the openings 115 to the internal chamber 116." (Michelson, col. 6, lines 59-61). According to Kuntz, implants that permit tissue ingrowth are disadvantageous and "dangerous" because of problems related to bacterial infection, susceptibility for repeated injury, difficulty in removal of the prosthesis, spinal cord compression, and dysphagia. (See Kuntz, col. 1, line 67 to col. 2, line 24). Accordingly, Applicant submits that the teachings of Michelson and Kuntz are mutually exclusive at least relative to bone ingrowth and cannot be properly combined to cover Applicant's claimed invention.

Applicant further submits that the combination of Kuntz with Michelson is improper because Michelson already teaches the Examiner's stated motivation for

combining the references, i.e., "forming a spinal implant in two halves." (See, e.g., Michelson, col. 10, lines 16-31; and Fig. 18). Accordingly, the motivation for combining Michelson with Kuntz is insufficient and the rejection must be withdrawn.

For independent claim 102, Applicant submits that even if Michelson and Kuntz were properly combined, the combination would still fail to result in an implant having a leading end with a third distance that is greater than the first and second distances, respectively. (See, Michelson, Fig. 2, leading end 120; and Kuntz, Figs. 7-10).

Applicant submits that new independent claims 1 and 102 are patentable and that dependent claims 2-34, 36-41, 101, and 103-146 dependent from one of independent claims 1 and 102, or claims dependent therefrom, are patentable at least due to their dependency from an allowable independent claim.

Applicant further submits that independent claim 147 is patentable over the cited art. Independent claim 147 recites an implant having "a minimum length as measured from said leading end to said trailing end so that said leading end and said trailing end of said implant are adapted to rest upon portions of the apophyseal rim when implanted, said implant being adapted to be wholly contained within the disc space when implanted." None of Albert, Michelson, or Kuntz, whether alone or in proper combination, teach, disclose, or suggest an implant as claimed in independent claim 147. Applicant submits that independent claim 147 is patentable and that dependent claims 148-155 dependent from independent claim 147, or claims dependent therefrom, are patentable at least due to their dependency from an allowable independent claim.

In view of the foregoing remarks, it is respectfully submitted that the claims are patentable. Therefore, it is requested that the Examiner reconsider the outstanding rejections in view of the amendments to the claims and preceding comments. Issuance of a timely Notice of Allowance of the claims is earnestly solicited.

To the extent any extension of time under 37 C.F.R. § 1.136 is required to obtain entry of this reply, such extension is hereby respectfully requested. If there are any fees due under 37 C.F.R. §§ 1.16 or 1.17 which are not enclosed herewith, including any fees required for an extension of time under 37 C.F.R. § 1.136, please charge such fees to our Deposit Account No. 50-1066.

Respectfully submitted,

MARTIN & FERRARO, LLP

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By: 

Amedeo F. Ferraro
Registration No. 37,129
Telephone: (310) 286-9800

Attachments